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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/649,724

08/28/2003

Yoshikazu Kobayashi

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EXAMINER

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ART UNIT

PAPER NUMBER

2616

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/649,724	KOBAYASHI, YOSHIKAZU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Man Phan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-12, 15, 17, 18, 25-32, 35, 37 and 38 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 13, 14, 19-22, 33, 34, 39 and 40 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/28/03, 3/9/06, 4/17/06</u> . | 6) <input type="checkbox"/> Other: _____  |

***DETAILED ACTION***

1. The application of Kobayashi for the "Terminal device, method for processing communication data inside the terminal device, and program for implementing the method" filed 08/28/2003 has been examined. This application claims foreign priority based on the application 288892/2002 filed October 01, 2002 in Japan. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a) – (d), which papers have been placed of record in the file. Claims 1-50 are pending in the application.

2. The applicant should use this period for response to thoroughly and very closely proof read and review the whole of the application for correct correlation between reference numerals in the textual portion of the Specification and Drawings along with any minor spelling errors, general typographical errors, accuracy, assurance of proper use for Trademarks <sup>TM</sup>, and other legal symbols @, where required, and clarity of meaning in the Specification, Drawings, and specifically the claims (i.e., provide proper antecedent basis for "the" and "said" within each claim). Minor typographical errors could render a Patent unenforceable and so the applicant is strongly encouraged to aid in this endeavor.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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4. Claims 41-50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, specifically, as directed to “computer program product” or “a software routine”. The claimed “computer program product” or “software routine” of claims 41-50 is non-statutory as at no time in the claim does applicant define the software routine. A computer program per se is not in one of the statutory categories. A computer program must be claimed in combination with an appropriate computer readable medium so that the program is capable of producing a useful, concrete and tangible result when used in a computer system

Claims 41-50 are direct to “a computer program product” which is not supported by either a specific asserted utility or a well established utility. Claims 41-50 merely defines “*a computer program product*” or “*data record for storing instructions*”, and is not directed to statutory subject matter. The claims appear to be nothing more than a signal not tangibly embodied in a manner so as to be executable and thus non-statutory for failing to be in one of the categories of invention. It’s not tangibly embodies and non-functional descriptive material - data per se. Therefore, what applicant is attempting to claim as a computer program product or data record as is known in the art. The claim is actually drawn to non-functional descriptive material stored on a machine readable medium. The description given in the specification does not cure this problem. In practical terms, claims define non-statutory processes if they simply manipulate abstract ideas, e.g., a bid or a bubble hierarchy, without some claimed practical application, *Schrader*, 22 F.3d at 293-94, 30 USPQ2d at 1458-59; *Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759.

5. Claims 41-50 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific asserted utility or a well established utility

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for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 13-14, 19-20 and 21-22, 33-34, 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Philbrick et al. (US#7,076,568) in view of Koga. (US#2002/0141446).

With respect to claims 1-2, 13-14 and 19-20, the references disclose a novel system and method for processing communication data packets, according to the essential features of the claims. Philbrick et al. (US#7,076,568) discloses in Fig. 1 a plan view diagram of a network storage system including a host computer connected to plural networks by an intelligent network interface card (INIC) having an I/O controller and file cache for a storage unit attached to the INIC. A host computer 20 is connected to an interface device such as intelligent network interface card (INI) 22 that may have one or more ports for connection to networks such as a local or wide area network 25, or the Internet 28. The host 20 contains a processor such as central processing unit (CPU) 30 connected to a host memory 33 by a host bus 35, with an operating system, not shown, residing in memory 33, for overseeing various tasks and devices, including a file system 23. Also stored in host memory 33 is a protocol stack 38 of instructions

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for processing of network communications and an INIC driver 39 that communicates between the INIC 22 and the protocol stack 38. A cache manager 26 runs under the control of the file system 23 and an optional memory manager 27, such as the virtual memory manager of Windows.RTM. NT or 2000, to store and retrieve file portions, termed file streams, on a host file cache 24. The host 20 is connected to the INIC 22 by an I/O bus 40, such as a PCI bus, which is coupled to the host bus 35 by a host I/O bridge 42. The INIC includes an interface processor 44 and memory 46 that are interconnected by an INIC bus 48. INIC bus 48 is coupled to the I/O bus 40 with an INIC I/O bridge 50. Also connected to INIC bus 48 is a set of hardware sequencers 52 that provide upper layer processing of network messages. Physical connection to the LAN/WAN 25 and the Internet 28 is provided by conventional physical layer hardware PHY 58. Each of the PHY 58 units is connected to a corresponding unit of media access control (MAC) 60, the MAC units each providing a conventional data link layer connection between the INIC and one of the networks (Col. 5, lines 53 plus).

However, Philbrick does not expressly disclose a middleware section for determining a send priority of the send request based on header information within the send frame. In the same field of endeavor, Koga. (US#2002/0141446) teaches a QoS control middleware in an integrated network QoS control system including a bandwidth-guaranteed network and a bandwidth-not-guaranteed network, comprising a use bandwidth registration table for recording a remaining bandwidth of each of the bandwidth-guaranteed network, the bandwidth-not-guaranteed network, and the integrated network and comprehensively managing a bandwidth of the integrated network; a remaining bandwidth table capturer for capturing data representing a usable remaining bandwidth of the bandwidth-guaranteed network from a remaining bandwidth table on

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said bandwidth-guaranteed network; and a network status monitor for monitoring a traffic status of the bandwidth-not-guaranteed network and issuing the traffic information; and a QoS manager performing for recording the remaining bandwidth of the bandwidth-guaranteed network captured by the remaining bandwidth table capturer and the remaining bandwidth of the bandwidth-not-guaranteed network calculated with traffic information notified by the network status monitor, to the use bandwidth registration table mathematically converting a QoS parameter received from an application via a QoS request receiver into a traffic parameter, notifying the application of the traffic parameter, controlling the value of the traffic parameter so as to adapt a service quality required by the application, and controllably decreasing the value of the traffic parameter so as to obtain a necessary and minimum quality allowed by the application when the service quality required by the application cannot be provided in a current remaining bandwidth of the integrated network under control of the value of the traffic parameter (See Fig. 1 and [0012] plus).

It's noted that networks are typically operated as a series or stack of layers or levels, where each layer offers services to the layer immediately above. Many different layered network architectures are possible, where the number of layers, the function and content of each layer may be different for different networks. The international standards organization (ISO) has developed an open systems interconnection (OSI) model defining a seven layer protocol stack including an application layer (e.g., layer 7), a presentation layer, a session layer, a transport layer, a network layer, a data link layer, and a physical layer (e.g., layer 1), wherein control is passed from one layer to the next, starting at the application layer in one station, proceeding to the bottom layer, over the channel to the next station and back up the hierarchy. The user of a

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host system generally interacts with a software program running at the uppermost (e.g., application) layer and the signals are sent across the network at the lowest (e.g., physical) layer. The transfer of user data from one network node to another network node is facilitated by the use of a communications model, such as the open systems interconnect (OSI) model, for example. The OSI model sets forth a seven-layer protocol stack and describes how control of user data is passed from one protocol layer to the next.

In accordance with various common communication architectures, CMDA2000 systems include layers within, for example, the seven layer protocol stack commonly understood by those of ordinary skill in the art as the Open Systems Interconnect (OSI) model. By layering the protocols in a stack, an intermediate protocol layer typically uses the layer below it to provide a service to the layer above. One such layer of the OSI stack architecture present within CMDA2000 systems is the Physical Layer where in an exemplary receiver, signals are received, despread, demodulated, decoded, channelized, framed and the like. As information is decoded and channelized, frames are constructed or re-constructed in accordance with relevant standards. Remaining layers in ascending order within the typical layered architecture include MAC Layer, Security Layer, Connection Layer, Session Layer, Stream Layer, and Application Layer. An exemplary CDMA2000 system may further operate in both single carrier and multiple carrier environments and according to both Frequency Division Duplexing (FDD) and Time Division Duplexing (TDD).

With respect to claims 21-22, 33-34 and 39-40, they are method claims corresponding to the apparatus claims 1-2, 13-14 and 19-20 as discussed in paragraph above. Therefore, claims



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21-22, 33-34 and 39-40 are analyzed and rejected as previously discussed with respect to claims 1-2, 13-14 and 19-20.

One skilled in the art of communications would recognize the need for a novel system and method for sending/receiving the packet for a high priority communication protocol, and would apply Koga's novel use of the QoS control middleware in an integrated network into Philbrick's processing mechanism for accelerating data transfers in communications system. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Koga's QoS control middleware in integrated network, QoS control method, and the program for the same into Philbrick's data communication apparatus for computer intelligent network interface card which transfers data between a network and a storage device according designated uniform datagram protocol socket with the motivation being to provide a system and method for processing communication data inside the terminal device .

***Allowable Subject Matter***

8. Claims 5-12, 15, 17-18 and 25-32, 35, 37-38 are allowable.
9. Claims 3-4 and 23-24 are objected to as being dependent upon the rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. .
10. The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein a cache table in

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which specific session information is registered in advance; and multiple FIFOs each corresponding to the send priority, wherein the sending section includes: a header comparison section that, if a send request for a send frame is issued from the protocol stack section, determines a send priority of the send request by searching the cache table based on header information at layer2 to layer4 of OSI within the send frame, and then queues the send request to one of the multiple FIFOs corresponding to the send priority determined; and a synthesis section that synthesizes send requests outputted from the multiple FIFOs according to the send priority of the one of the multiple FIFOs to which the send request is queued, and then outputs a synthesized send request to the device driver section; wherein the middleware section includes a sending section that: if a send request to a predetermined destination for a specific packet defined by a communication protocol at higher than or equal to layer5 of OSI is issued from the protocol stack section in advance and if the send request is a first one of consecutive send requests, checks on header information of the specific packet, then registers into the cache table session information extracted from headers at layer2 to layer4 of OSI within a send frame carrying the specific packet, raises a send priority of the send request, and outputs the send request to the device driver section; and if the send request is among the consecutive send requests other than the first one and if session information extracted from headers at layer2 to layer4 of OSI within a send frame carrying the specific packet is registered in the cache table, raises a send priority of the send request, and outputs the send request to the device driver section; , as specifically recited in the claims.

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11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Awadallah et al. (US#6,449,251) is cited to show the packet mapper for dynamic data packet prioritization.

The Alden et al. (US#6,101,543) is cited to show the pseudo network adapter for frame capture, encapsulation and encryption.

The Deikman et al. (US#2003/0188031) is cited to show the network controller with pseudo network interface device drivers to control remote network interfaces.

The Starr et al. (US#6,807,581) is cited to show the intelligent network storage interface.

The Boucher et al. (US#6,226,680) is cited to show the intelligent network interface system method for protocol processing.

The Yanosy (US#7,069,260) is cited to show the QoS framework system.

The Mandato (US#7,076,552) is cited to show the universal QoS adaptation framework for mobile multimedia applications.

The Jorgensen (US#6,640,248) cited how the application aware, QoS, MAC layer.

The Davis et al. (US#5,898,889) is cited to show a Qualified burst cache for transfer of data between disparate clock domain.

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The Mortensen et al. (US#5,481,735) is cited to show a method for modifying packets that meet a particular criteria as the packets pass between two layers in a network.

The Ando et al. (US#7,031,310) is cited to show a router and IP-packet transferring.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

04/17/2007.



**MAN U. PHAN**  
**PRIMARY EXAMINER**